W. E. PHILLIPS.

INK FOUNTAIN ATTACHMENT FOR TYPE WRITERS.

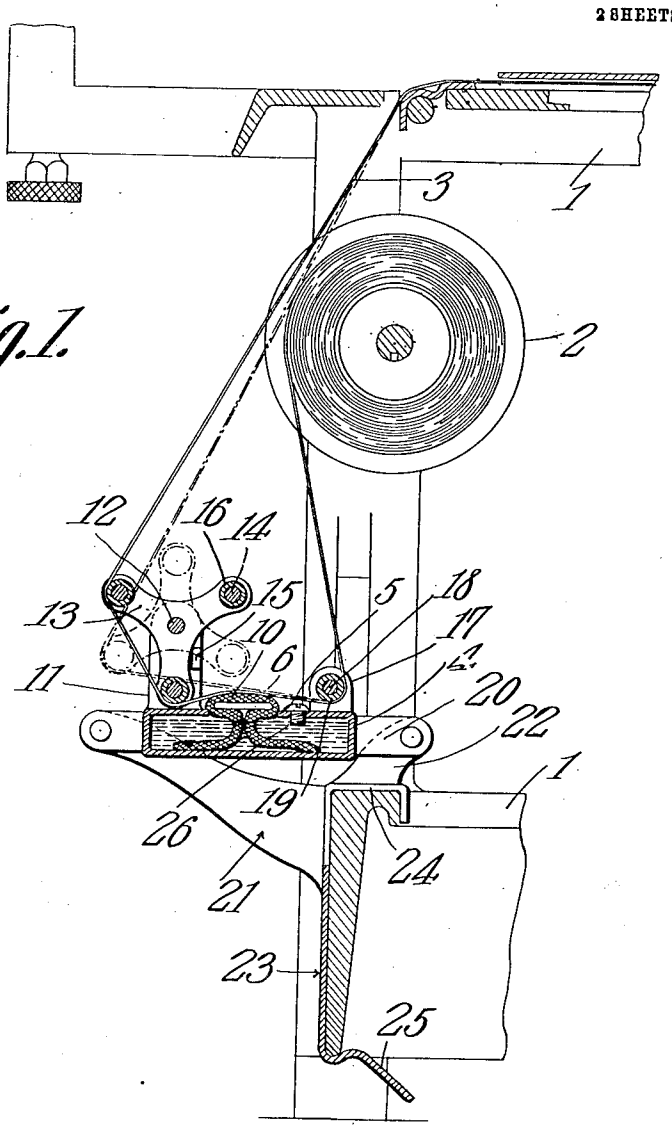
APPLICATION FILED SEPT. 3, 1908.

926,764.

Patented July 6, 1909.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

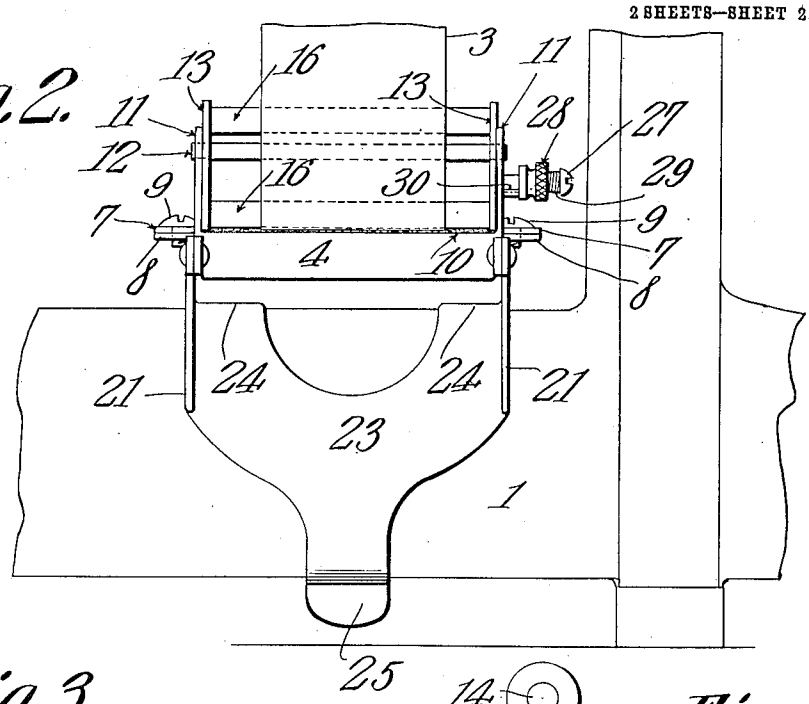


Fig. 3.

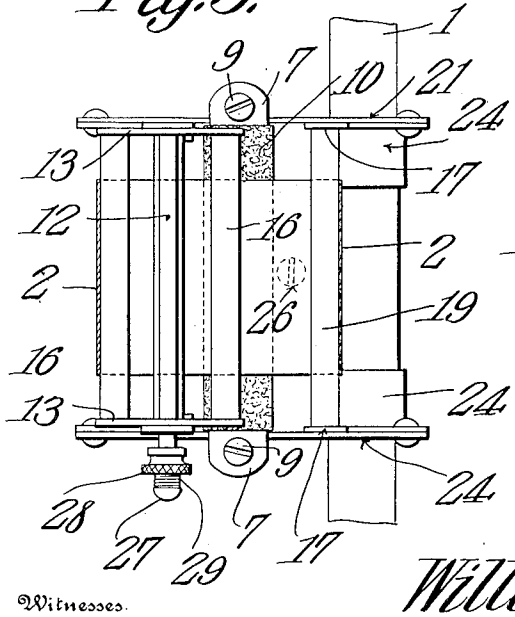
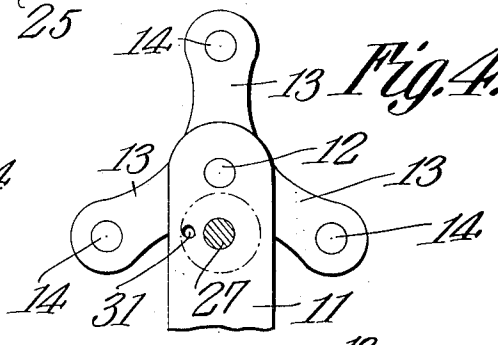


Fig. 4.



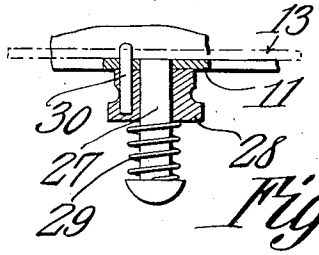


Fig. 5.

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UNITED STATES PATENT OFFICE.

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INK-FOUNTAIN ATTACHMENT FOR TYPE-WRITERS.

No. 926,764. Specification of Letters Patent. Patented July 6, 1909.

Application filed September 3, 1908. Serial No. 451,516.

To all whom it may concern:

Be it known that I, WILLIAM E. PHILLIPS, a citizen of the United States, residing at Jacksonville, in the county of Duval and State of Florida, have invented a new and useful Ink-Fountain Attachment for Type-Writers, of which the following is a specification.

This invention has reference to ink fountain attachments for typewriters, and its object is to provide a means whereby the ribbon of the typewriter may be reinked at will without removing the ribbon from the typewriting machine.

The ribbons of typewriters are customarily provided with a body of ink carried by the fabric of the ribbon. After such a ribbon has been in use for a period of time the ink becomes more or less exhausted and the imprint made by the typewriting machine becomes pale and sometimes practically illegible, because of the want of sufficient ink. This often occurs long before the fabric of the ribbon has become so worn as to be useless, and it then becomes necessary to apply a new ribbon to the typewriting machine, or the exhausted ribbon must be removed from the machine and re-inked.

By the present invention it is unnecessary to remove the ribbon from the machine in order to re-ink the ribbon, and furthermore, the re-inking of the ribbon is practically automatic, being accomplished by the ordinary operation of the typewriter in the act of imprinting with the type of the machine, the ribbon-actuating mechanism acting to carry the ribbon into active relation to a supply of ink, so that, as the ribbon is slowly fed along, its active surface becomes re-inked.

It is preferable to re-ink the ribbon just prior to its being rolled upon one of the spools of the typewriter, since, by this means, there is ample time for the ink to thoroughly infiltrate the fibers of the fabric of the ribbon and become practically uniformly distributed therethrough. When the ribbon is moving in its active position after being re-inked, it automatically avoids engagement with the inking side of the attachment and passes from the ribbon spool to the type without receiving more ink.

Since a single inking of the ribbon will last for a considerable time, provision is made for locking the means for bringing the ribbon into active engagement with the inking mechanism, out of action at the volition of the operator.

The invention will be best understood from a consideration of the following detail description, taken in connection with the accompanying drawings, forming a part of this specification, in which drawings:—

Figure 1 is a vertical central section through the ink fountain attachment, and so much of a type-writer as is necessary for the understanding of the invention. Fig. 2 is an elevation of the attachment with adjacent portions of a typewriter frame. Fig. 3 is a plan view of the attachment. Figs. 4 and 5 are detail views, illustrating the lock for holding the attachment out of inking operation.

Referring to the drawings, there is shown a typewriter frame 1, which may be taken as indicative of the frame of any form of typewriter to which the attachment may be applied, and it may be added that the attachment may be modified in various respects, to adapt it to different forms of typewriters. It may be stated that in the drawings the showing of the typewriter frame is that of a known form of typewriter. There is also shown a ribbon-spool 2, and a ribbon 3, both of which are of known construction and need no special description. Since both the ribbon spools and the ribbon in different forms of typewriters vary greatly, it is to be understood that the showing of the drawings is largely indicative, and that the invention is not confined to any particular construction of typewriting machine.

In the particular construction shown there is illustrated an ink reservoir 4, in the shape of a flat container of substantially rectangular form in cross section, but, it will be understood that the form of the reservoir may be greatly varied from that shown. This reservoir is formed on its upper face with a longitudinal slot 5, above which there is located a strip 6, having at each end an ear 7, matching another ear 8, projecting from the body of the reservoir, and the ears are secured together by screws 9 or otherwise, so that the strip 6 may be attached to the reservoir in immediate proximity to the slot 5.

The strip 6 is surrounded by a piece of felt

or other suitable material, indicated at 10, the space between the longitudinal edges of the strip 6 and the corresponding edges of the slot 5 being sufficient to permit the passage of the felt 10. The free ends of the felt 10, after being gathered together beneath the strip 6, by means of any suitable fastening devices, are then spread out within the reservoir 4, so as to present considerable absorbent surface to a supply of ink within the reservoir. The felt becomes thoroughly soaked with the ink, and, by capillary attraction, the ink is constantly fed to the exposed surface of the felt above the strip 6, reaching the same through the spaces between the strip and the edges of the slot 5, but the snug fit of the felt in these spaces prevents any leakage of the ink from the reservoir to the exterior thereof at these points.

Rising from each end of the reservoir, adjacent to the slot 5, are posts or supports 11, two in number, and carrying at their upper ends a rod 12, secured at its ends to the posts or uprights 11, and connecting the same. Mounted upon the rod 12, adjacent to each post 11, is a three-armed spider 13, the arms being equidistantly disposed and radial from the axis of the spider. The free ends of the three arms of the two spiders are connected together by rods 14, parallel with the rod 12, about which latter the frame composed of the spiders and connecting rods 14 is capable of partial rotation, the movement of rotation being limited in each direction by a projecting stud 15, formed on each post 11 and in the path of two adjacent arms of each spider, the extent of rotation in the particular structure shown being about 60 degrees, more or less. Such movement is sufficient to bring one pair of arms 13 so that the connecting rod 14 for said arms and the rod 12 are in the same vertical plane longitudinal to both rods as shown in dotted lines in Fig. 1, and in full lines in Fig. 4. This occurs when the frame is at one limit of its rotative movement, and when it is at the other limit of its rotative movement the parts have moved through an arc of about 60°, and are in the position shown in full lines in Fig. 1.

Each rod 14 is surrounded by a roller 16, extending substantially throughout the length of the rod 14 between the supporting arms 13 thereof, and these rollers are free to rotate. When the frame is rotated to one limit of its travel then one of the rollers 16 is closely adjacent to the upper surface of the reservoir 4, and when the frame is rotated to the other limit of its travel then two rollers 16 are located equidistant from the upper surface of the reservoir and at a considerable distance therefrom. On the other side of the slot 5 from the posts 11 the reservoir is provided with two upright ears 17 connected by a rod 18, upon which is mounted a roller 19, similar to the rollers 16 before referred to. The reservoir is also provided with other ears 20, projecting laterally therefrom, and fast upon the ends of yoke arms 21, 22, projecting from a supporting plate or frame 23, having at one end an overturned lip 24 and at the other end an elastic tongue 25, adapted to engage over and under, respectively, the upper and lower edges of a portion of the frame 1 of the machine in the particular type shown in the drawing. The plate 23 with its lip 24 and elastic tongue 25 forms a clip structure, by means of which the reservoir may be readily attached to or removed from the frame of the typewriter, without requiring any modification whatsoever of the typewriter frame, or any change or alteration therein, or even the marring of the typewriter structure in the slightest degree. Access to the interior of the reservoir 4 for the insertion of ink therein or for any other purpose may be had through a perforation, normally closed by a screw 26, or any other means for this purpose may be used.

In the use of the ink fountain attachment the reservoir structure and parts carried thereby are applied to the frame of the typewriter in substantially the position shown in the drawings, the fountain and its supporting structures being below one of the inking ribbon reels or drums, or spools 2, and preferably, though not necessarily, at the left-hand end of the machine when of the general type illustrated in the drawing. The ribbon 3 coming from the spool 2 is carried down, around and under the roller 19, thence over the felt 10, constituting the inking pad of the ink fountain, thence under the lower roller or rollers 16, as the case may be, thence upward and against the roller 16, which, in the particular position shown in Fig. 1, is the left-hand roller, and finally the ribbon is carried to the guiding mechanism by which it is directed in front of the type levers of the typewriter structure, but as this guiding mechanism is shown in the drawings as of the structure employed in a well known form of a commercial type of typewriter machine, no detail description is herein given.

When the ribbon is being wound upon the spool adjacent to the inking mechanism, then the drag of the ribbon will cause the directing frame, composed of the arms 13 and rods 14 with the rollers 16, to move counter-clockwise, as viewed in Fig. 1, to the position shown in solid lines in Fig. 1, until further movement is arrested by the stop 15. Under these conditions, one of the rods 14 is brought into the same vertical longitudinal plane as the rod 12, and consequently the ribbon is directed into comparatively close relation to the top of the reservoir 4. The roller 19 is also in comparatively close relation to the top of the reservoir 4, and this

relation is fixed. Under these conditions, the ribbon is caused to travel laterally over the inking pad 10 in contact therewith. In the position shown in Fig. 1, the ribbon, after leaving the lowermost roller 16, must ride up over the inking pad 10, and then down and under the roller 19 before passing to the reel or spool 2. The result is that the ribbon is caused to bear upon the inking pad 10 with considerable force, and the pressure thus exerted is sufficient to transfer a portion of the ink from the inking pad to the corresponding surface of the ribbon, and the ribbon so inked is then wound upon the spool 2 with the inked surface innermost. The reel or spool 2, as is customary in typewriting machines, is actuated positively by connection with the type keys and other like parts, propelled by the operator in the usual operation of the typewriter, and it is this movement of the spool 2 which causes the drawing of the ribbon 2 over the inking pad in contact therewith. The operation of inking the ribbon is therefore simultaneous with the operation of the typewriting machine for the production of typewritten matter, and is, to this extent, entirely automatic. Ultimately, the ribbon is all unwound from the remote spool and is all wound upon the spool at that end of the machine where is located the fountain attachment. When this occurs it is customary to reverse the order of travel of the ribbon by a suitable operation of the customary ribbon-reversing mechanism, and then the travel of the ribbon is away from the spool at the end of the machine carrying the ink fountain and toward the more remote spool. As soon as this occurs the drag of the ribbon is reversed, and the guiding frame, made up of the arms 13 and rods 14, with the rollers 16, is rotated in a clockwise direction as viewed in Fig. 1, until stopped by the lugs or stops 15, when the parts assume the position indicated in dotted lines in Fig. 1. Now, the roller 16 which was previously in close relation with the upper surface of the reservoir 4 is caused to move outwardly and upwardly away therefrom, until at a considerable distance above the position first indicated. Now the ribbon has a path of travel above and out of contact with the ink pad 10, as shown in dotted lines in Fig. 1, so that no ink is transferred to the ribbon from the pad during the movement of the ribbon away from the ribbon-drum 2 shown in Fig. 1. Provision is made for maintaining the guiding frame 12, 13, in the position shown in dotted lines in Fig. 1, for an indefinite period.

In order to lock the guiding frame in the inactive position, that is so that the ribbon will not be brought into contact with the inking pad in either direction of its travel, there is made fast upon one of the posts or standards 11 a headed pin 27, carrying a button 28, capable of sliding longitudinally on said pin and of rotating thereon. This button 28 is constantly urged toward the standards 11 by means of a helical spring 29 on the pin 27, between the button 28 and the head of said pin. The button 28 carries a stud 30, projecting from the face of the button remote from that engaged by the spring 29, and there is formed through the post 11 a perforation 31 in the path of the stud 30, and when the said stud 30 is brought into coincidence with the perforation 31, then the spring 29 will cause the button 28 to move longitudinally on the pin 27, and so project the stud 30 through the post 11. The stud 30 is of such length that when projected through the post 11 its free end is in the path of two adjacent arms 13, and the relation of this stud 30 and the stop 15 is such that the guiding frame is effectually locked against rotation in either direction, but this occurs only when the guiding frame is in the position shown in dotted lines in Fig. 1.

When it is desired to unlock the guiding frame and permit its free rotation under the action of the ribbon to the limited extent provided, then the button 28 is moved along the pin 27 against the action of the spring 29, until the stud 30 is withdrawn from the perforation 31, and then the stud may, by the rotation of the button 28, be brought into engagement with the plain surface of the post 11, away from the perforation 31, so that the stud 30 remains inactive. It is thus within the volition of the operator of the typewriter whether the inking mechanism shall be active or be held in the inactive position.

What is claimed is:—

1. An inking attachment for typewriters provided with ink ribbons, comprising an ink holder, and automatic means for moving the ink ribbon into and out of operative relation to the ink holder in accordance with the direction of feed of the ink ribbon.

2. An inking attachment for typewriters provided with ink ribbons and a reverse mechanism for the ink ribbon, comprising an ink holder and means for bringing the ink ribbon into engagement with the active portion of the ink holder when the ink ribbon is traveling in one direction and disengaging the ink ribbon from the active portion of the ink holder when the ribbon is traveling in the other direction.

3. An inking attachment for typewriters provided with ink ribbons and reverse mechanism therefor, comprising an ink holder and means for bringing the ink ribbon into engagement with the active portion of the ink holder when the ribbon is traveling in one direction, and disengaging the ink ribbon from the active portion of the ink holder

when the ribbon is traveling in the other direction, said means being actuated by the ink ribbon.

4. An inking attachment for typewriters provided with ink ribbons and winding reels or spools for the ends of the ribbons, comprising an ink holder adjacent to one of the winding spools and means for bringing the ribbon into engagement with the active portion of the ink holder when the ink ribbon is winding on the adjacent spool or reel, and for disengaging the ink ribbon from the ink holder when the ink ribbon is unwinding from the said spool or reel.

5. An inking attachment for typewriters provided with ink ribbons, comprising an ink holder, means for the attachment to and removal of the holder from the typewriting machine without modification of the latter, and automatic means upon the attachment for directing the ink ribbon into or out of active relation to the ink holder in accordance with the direction of travel of the said ink ribbon.

6. An inking attachment for typewriters provided with ink ribbons, comprising an ink holder, means for the attachment to and removal of the ink holder from a typewriting machine without modification of the latter and means on the attachment operated by the travel of the ink ribbon for directing the ink ribbon into or out of active relation to the ink holder.

7. An inking device for applying ink to the ink ribbons of typewriters while on the typewriting machine, comprising an ink holder and means actuated by the movement of the ink ribbon for carrying the latter into active relation with the ink holder.

8. An inking device for applying ink to the ink ribbons of typewriters while on the typewriter machines, comprising an ink holder, means for attaching the same to a typewriter, and means carried by the ink holder structure and actuated by the reversal of movement of the ink ribbon for carrying the latter either into or out of active relation with the ink holder.

9. An inking device for applying ink to the ink ribbons of typewriters while on the typewriter machines, comprising an ink holder and means actuated by the reversal of movement of the ink ribbon for carrying the latter into or out of active relation with the ink holder, in accordance with the direction of travel of the ink ribbon.

10. An inking device for the ink ribbons of typewriter machines, comprising an ink holder and means actuated by the reversal of movement of the ink ribbon for directing the latter into or out of active relation to the ink holder.

11. An inking device for the ink ribbons of typewriter machines, comprising an ink holder, means actuated by the reversal of movement of the ink ribbon for directing the latter into or out of active relation to the ink holder, and means for locking the ribbon-directing means in the inactive position.

12. An inking device for the ink ribbons of typewriter machines, comprising an ink reservoir, means for conveying ink to the exterior thereof, and a ribbon-directing device on the reservoir actuated by the reversal of travel of the ink ribbon to carry the latter into or out of engagement with the inking means exterior to the reservoir.

13. An inking device for the ink ribbons of typewriter machines, comprising an ink reservoir, means for conveying ink to the exterior thereof, and an automatic ribbon-directing device on the reservoir and having a limited movement to and from the reservoir to carry the ink ribbon into and out of engagement with the inking means exterior to the reservoir.

14. An inking device for the ink ribbons of typewriting machines, comprising an ink reservoir, means for conveying ink to the exterior thereof and an automatic ribbon-directing device on the reservoir and having a limited rotative movement to carry the ink ribbon into and out of engagement with the inking means exterior to the reservoir.

15. An inking device for the ink ribbons of typewriter machines, comprising an ink reservoir, means for conveying ink to the exterior thereof, and a ribbon-directing device on the reservoir consisting of a rotatable member provided with spaced ribbon-directing supports and movable on its axis by the ribbon in directions to carry the ribbon into and out of active relation with the exterior inking means of the reservoir.

16. An inking device for the ribbons of typewriting machines, comprising an ink reservoir, an ink pad thereon extending to the interior of the reservoir, a rotatable frame on the reservoir at one side of the pad and provided with spaced rollers parallel with the axis of the frame, means for restricting the rotative movement of the frame, and a guiding roller on the reservoir on the other side of the pad.

17. An inking device for the ribbons of typewriter machines, comprising an ink reservoir, an ink pad thereon extending to the interior of the reservoir, a rotatable frame on the reservoir at one side of the pad and provided with spaced rollers parallel with the axis of the frame, means for restricting the rotative movement of the frame, a guiding roller on the reservoir on the other side of the pad, and means for locking the rotatable frame against active movement on its axis.

18. An inking device for the ribbons of typewriter machines comprising an ink reservoir, an ink pad thereon in communication with the interior of the reservoir, a rotatable frame on the reservoir at one side of the pad and provided with spaced rollers parallel

with the axis of the frame, means for restricting the rotative movement of the frame, a guiding roller on the reservoir on the other side of the pad, means for locking the rotatable frame against active movement on its axis, and a clamp support for the reservoir adapted to removably clasp a portion of the typewriter frame.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM E. PHILLIPS.

Witnesses:
WM. SAULS,
MRS. C. N. JESSEN.